THE RELATIONSHIP BETWEEN LEARNING INTEREST AND LEARNING ENVIRONMENT AT HOME WITH MATHEMATICS LEARNING OUTCOMES

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ABSTRACT

Mathematics learning result is related to many factors. Learning interest and learning environment at home are some factors that are suspected to be related to the student's mathematics learning result. The study aims to determine whether there is a positive and significant correlation between learning interest and learning environment at home with mathematics learning results of student grade VIII at State Junior High School (SMP N) 1 Sedayu Bantul, even semester academic year 2018/2019. The study population was students of grades VIII B, VIII C, VIII D, VIII E, VIII F, and VIII G of SMP N 1 Sedayu Bantul, even semester academic year 2018/2019 with a total of 188 students. A random sampling technique took the sample to class, and it was obtained that class VIII E consisted of 31 students. The data collection technique was used questionnaires and tests. The research instrument test was used as a validity test, a reliability test, and a different power test. The prerequisite tests analysis included a normality test, an independent test, and a linearity test. The analysis of data was used correlation analysis and linear regression analysis. The research result indicates that there is a positive and significant correlation between learning interest (X_1) and the learning environment at home (X_2) with mathematics learning result with $F_{count} > F_{table}$ or $4{,}0505 > 3{,}34$ with $R = 0{,}4734$, and $R^2 = 0{,}2244$. $\hat{Y} = 12{,}7059 + 0{,}2691X_1 + 0{,}3358X_2$, and $(RC\ X_1) = 36{,}1876\%$,$(RC\ X_2) = 63{,}8124\%$, $(EC\ X_1) = 8{,}1205\%$, and $(EC\ X_2) = 14{,}3295\%$..

Keywords: learning interest, learning environment at home, mathematics learning result.

INTRODUCTION

Education is one of the factors that influence develop a country. The progress of a country in all fields in the fields of economy, technology, agriculture, and others cannot be separated from the role of education. Smart or educated citizens are expected to be able to have a positive influence on developing a country. Also, education is a forum for activities that can be seen as a printer of quality Human Resources (HR). To improve the quality of human resources, it is necessary to improve the quality of education. The keys to improving the quality of education include teachers and students. The way teachers in improving the quality of education are to guide students in understanding the lesson well. In this case, students who accept the teacher's lessons are expected to understand them well. According to Eveline Siregar and Hartini Nara (2015: 173), the teaching and learning process's success is influenced by two factors: the factors present in students who are learning and the factors that exist outside of students.

Based on the results of interviews with 15 seventh grade students of SMP Negeri 1 Sedayu on January 22, 2018, the results were obtained that mathematics is a difficult subject and too many formulas so that students' willingness to learn mathematics is low. Therefore, students ignore the teacher when explaining the material, and there are still students who do not maximize mathematics learning time well. Lack of attention and concentration of students during teaching and learning activities occur due to the lack of students' desire to understand mathematics. This shows that students' learning interest in mathematics is still low.

The one reason outside the person that influences student learning results is the learning environment, especially the home's learning environment. A comfortable, clean, and supportive learning environment at home can be a meaningful environment for a child's development. As expressed by Eveline Siregar and Hartini Nara (2014: 174), external factors that cause learning problems such as the

cleanliness of the house, hot air, study rooms, and learning tools that do not meet the requirements. Therefore, the learning environment at home has a vital role in the success of a student's learning.

Based on the results of interviews with 15 seventh grade students of SMP Negeri 1 Sedayu on January 22, 2018, it was found that students rarely study at home, let alone learn mathematics. This is influenced by several factors, such as the unavailability of a special room for learning, so learning activities are carried out in the living room. Lack of lighting in the study room, stationery, and learning tools that are not complete, and the house's atmosphere that does not support learning activities are factors students rarely learn. Some students have not used the time to study but instead choose to watch television, play mobile phones, or play with friends. This is what causes the learning environment at home to be less supportive of student learning activities.

Based on the results of interviews with grade VII teachers of SMP Negeri 1 Sedayu on January 22, 2018, it was found that some students consider mathematics as a subject that is difficult to understand compared to other subjects. This is reinforced by the student mathematics learning outcomes that are still far from the Minimum Completeness Criteria (MCC) 75.00. The following table is a Mid Semester Assessment (PTS) class VIII student of SMP Negeri 1 Sedayu, Bantul Regency, Even Semester Academic Year 2018/2019.

Table 1. Results of PTS VIII SMP Negeri 1 Sedayu Mathematics Bantul Regency Even Semester Academic Year 2018/2019

Class	VIIA	VIIB	VIIC	VIID	VIIE	VIIF	VIIG
Total Students	32	32	30	31	31	32	32
Average	78,05	26,56	59,58	49,44	59,27	54,84	59,61
Complete	24	0	4	1	4	2	1
Not Complete	8	32	26	30	27	30	31

Table 1 above shows the average value of PTS mathematics class VIII SMP Negeri 1 Sedayu Bantul Even Semester Academic Year 2018/2019. There are still many students who get grades below MCC, which is 75.00. This shows that the mathematics learning result of Students in Grade VIII is still low. So far, the low learning result, the quality of the learning environment at home, and the low-learning interest have not been studied before, so it is necessary to check whether these variables are related or not.

Based on the background of the problem, the identification of the problem is obtained as follows:

1. Student mathematics learning results are still low.
2. Student learning interest is still low.
3. The learning environment at home still does not support the teaching and learning process.
4. There are still students who lack concentration when the math class takes place.
5. There are still students who think that mathematics is a difficult subject.
6. There are still students who have difficulty in understanding and memorizing mathematical formulas.

Based on the background description and identification of the problem and the researcher's ability and limitations, the researcher limits the problem to achieve the expected goals. Researchers limit learning interest problems, learning environment at home with mathematics learning results of student grade VIII at SMP N 1 Sedayu Bantul, even semester academic year 2018/2019 based on cognitive aspects of Statistics material.

Based on the background and boundaries of the problem, it can be formulated that the problem will be investigated, namely: 1) Is there a positive and significant relationship between learning interest and mathematics learning result of students grade VIII at SMP N 1 Sedayu Bantul even semester academic year 2018/2019? 2) Is there a positive and significant relationship between learning environment at home and mathematics learning result of students grade VIII at SMP N 1 Sedayu Bantul even semester academic year 2018/2019? 3) Is there a positive and significant relationship between learning interest and learning environment at home with mathematics learning result of students grade VIII at SMP N 1 Sedayu Bantul even semester academic year 2018/2019?

Based on these problems, the purpose of this study is to analyze: 1) Whether or not there is a positive and significant relationship between learning interest and mathematics learning result of students grade VIII at SMP N 1 Sedayu Bantul even semester academic year 2018/2019. 2) Whether or not there is a positive and significant relationship between learning environment at home and mathematics learning result of students grade VIII at SMP N 1 Sedayu Bantul even semester academic year 2018/2019. 2) Whether or not there is a relationship between learning interest and learning environment at home with mathematics learning result of students grade VIII at SMP N 1 Sedayu Bantul even semester academic year 2018/2019.

METHODS

This research is classified as quantitative research. The study was carried out at SMP N 1 Sedayu, Bantul Regency. At the same time, the study's time was conducted in the event semester 2018/2019. According to Sugiyono (2015: 117), the population is an area that consists of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions. Based on Table 1, Results of PTS Mathematics Class VIII of SMP N 1 Sedayu Bantul Even Semester Academic Year 2018/2019 class VIIIA obtained a high average value compared to other classes. Therefore, class VIIIA is not made a member of the population. This study's population was students of classes VIIIB, VIIIC, VIIID, VIIIE, VIIIF, and VIIIG of SMP N 1 Sedayu Bantul, even semester 2018/2019 with a total of 188 students. Sugiyono (2015: 118) states that the sample is part of the population's number and characteristics. In this study, data collection techniques using a random sampling of classes obtained by lottery. The drawing is done by randomly taking classes and selected class VIII E as a sample class.

Regarding the research variables, Sugiyono (2015: 60) defines it as anything determined by the researcher to be studied so that information is obtained about it, then conclusions are drawn. In this study, there are two variables, namely the independent variable and the dependent variable. The independent variable consists of learning interest (X_1) and learning environment at home (X_2). At the same time, the dependent variable consists of mathematics learning results (Y). Data collection techniques used in this study were to offer tests and questionnaires. According to Sugiyono (2015: 199), the questionnaire is a data collection technique done by giving a set of questions or written statements to respondents to answer.

The questionnaire in this study used two questionnaires, namely learning interest (X_1) and learning environment at home (X_2) given to students, namely to collect data on learning interest and learning environment at home in class VIII students of SMP N 1 Sedayu Bantul even semester 2018/2019. This study's test technique was given to students to obtain data and measure achievement mathematics learning results of student grade VIII of SMP N 1 Sedayu Bantul, even semester 2018/2019. Researchers provide tests in multiple-choice questions with four alternative answers, namely a, b, c, and d, with a score of one for the correct answer and a zero score for the wrong answer. The questionnaire test uses the reviewers' content validity test and the instrument reliability test with the Alpha formula. In contrast, the test instrument questions use the content validity test by the reviewers and the product-moment correlation technique, the difference power test, and the instrument reliability test with the KR-20 formula (Suharsimi Arikunto. 2009: 101). After the data is collected, the analysis prerequisite tests must be met the normality test, independence test, and linearity test. Data analysis uses product-moment correlation analysis and multiple linear regression analysis.

RESULTS AND DISCUSSION

A normality test is carried out to decide learning interest (X_1), learning environment at home (X_2), and mathematics learning result (Y) are normally distributed or not. The summary of normality test results is in Table 2.

Table 2. Summary of Normality Test Results

No	Research Variable	χ^2_{count}	df	χ^2_{table}	Conclusion
1.	Learning interest (X_1)	0,9704	2	5,9915	Normal
2.	Home Study Environment (X_2)	1,1580	2	5,9915	Normal
3.	Mathematics Learning Result (Y)	1,5919	2	5,9915	Normal

Based on the table above, the distribution of data obtained on each variable is normally distributed.

The independent test is used to decide the variables of learning interest (X_1) and learning environment at home (X_2) are independent or dependent (not independent). The independent test summary is Table 3.

Tabl 3. Summary of Independent Test Results

Research Variable	χ^2_{count}	χ^2_{table}	df	Conclusion
X_1 **and** X_2	27,2462	37,6525	25	Independent

Based on the table above, it can be concluded that the variables of learning interest and home study environment have no relationship so that the two variables are mutually independent.

A linearity test is performed to decide the independent variables (X_1 and X_2), and the dependent variable (Y) is linear or not. The linearity summary is in Table 4.

Table 4. Summary of Linearity Test Results

No	Research Variable	F_{count}	F_{table}	$df\ (v_1, v_2)$	Conclusion
1.	X_1 and Y	1,40	2,62	(17,12)	Linear
2.	X_2 and Y	0,60	2,46	(15,14)	Linear

Based on the Table 4 above, learning interest and home study environment with mathematics learning results are Linear.

The First Hypothesis Test. The results of the study show that there is a positive and significant relationship between learning interest and mathematics learning results. In other words, the greater the learning interest, the better the mathematics learning result. In this study, obtained a simple correlation coefficient (r) of 0,3478 at a significant level of 5%, degrees of freedom df = 29 and t_count = 2,1299> t_table = 1,6991. To get the determinant coefficient (r^2) of 0,1353, which can be explained, 13,53% of mathematics learning results are influenced by learning interest while other factors influence others. There is a variation in mathematics learning result (Y), which is explained by learning interest (X_1) through a linear line $\hat{Y} = 22{,}0586 + 0{,}4482X_1$ with a coefficient of regression of 0,4482. This means that each increase in one learning interest (X_1) results in a 0,4482 mathematics learning result (Y). If the learning interest in mathematics is high, then mathematics learning results will improve, and vice versa. This study's results are consistent with research conducted by Muhammad Fais (2016) and Nurul Istiqomah Fajriani (2017). The study results show a positive and significant relationship between learning interest in mathematics learning results. According to the researchers' assumptions, this is due to students' amativeness and participation factors in taking mathematics lessons when learning occurs. Another reason influencing this study's results is students' likes and interests in writing or listening to the teacher's mathematics lessons. Therefore, if students' interest in learning is still low, it is expected that teachers and parents can help provide support and enthusiasm so that students can learn well so that learning results make what is expected.

The Second Hypothesis Test. The study results show a positive and significant relationship between the learning environment at home with mathematics learning results. In other words, the better the learning environment at home, the better the mathematics learning result. In this study, a simple correlation coefficient (r) of 0,4303 was obtained at a significant level of 5%, degrees of freedom df = 29 and $t_{count} = 2{,}5671 > t_{table} = 1{,}6991$. To get a determinant coefficient (r^2) of 0,1852, which can be explained that the learning environment influences 18,52% of mathematics learning results at home while

other factors influence the rest. There is a variation in mathematics learning result (Y) explained by the learning environment at home (X_2) through a linear line $\hat{Y} = 25{,}9811 + 0{,}43422X_2$ with regression of 0,4342. This means that every increase of one unit of the learning environment at home (X_2) results in a 0,4342 mathematics learning result (Y). In other words, if the learning environment at home is good and supports learning activities, it will have a good effect on mathematics learning results, and vice versa. This study's results are by Nining Apriani (2016) and Nurul Amalia Kurniasih (2017). This study shows a positive and significant relationship between the learning environment at home with mathematics learning results. This is according to the researchers' assumptions because parents who pay attention to their children's education, such as they care about their children's learning, pay attention to their children's needs in learning, manage their learning time, offer or complete learning tools, pay attention to their children's learning or not, so students are interested and excited to study mathematics. So if the learning environment at home is still inadequate, it is expected that parents can help provide support and complete the needs of students so they can learn well so that it affects the mathematics learning result.

Third Hypothesis Test. The results show a positive and significant relationship between learning interest and learning environment at home with mathematics learning results. In other words, the greater the learning interest, the better the learning environment at home. It will also affect mathematics learning results. This study obtained a multiple correlation coefficient (R) of 0,4734 at a significant level of 5%, $v_1 = 2$, and $v_2 = 28$ and obtained $F_{count} > F_{table}$ or $4{,}0505 > 3{,}34$. To get the determinant coefficient, (R^2) of 0,2244, which can be explained, 22,44% of mathematics learning result is influenced by learning interest and learning environment at home. In contrast, the rest is influenced by other factors. There are variations in mathematics learning result (Y) explained by learning interest (X_1) and learning environment at home (X_2) through linear line $\hat{Y} = 12{,}7059 + 0{,}2691X_1 + 0{,}3358X_2$. This means that every increase of one unit of learning interest (X_1) results in 0,2691 mathematics learning result (Y), every increase of one unit of the learning environment at home (X_2) results in 0,3358 mathematics learning result (Y), in other words, if learning interest and learning environment at home of large students will have a good effect on mathematics learning result. In contrast, the learning interest and learning environment at home of low students will negatively affect mathematics learning results. This study's results are consistent with Aqila Hanindhita Hutami (2017) with the title the Relationship between Learning Interest and Learning Environment at Home with Mathematics Learning Result of Students of Class X MIPA SMA N 3 Cilacap even semester academic year 2017/2018. The study results show a positive and significant relationship between learning interest and learning environment at home with mathematics learning results. According to the researchers' assumptions, students' amativeness, and participation factors in taking mathematics lessons when learning are taking place. The parent factors that help provide support and complete student needs to learn well affect mathematics learning results.

In addition, the double linear regression equation obtained for X_1 and X_2 is $\hat{Y} = 12{,}7059 + 0{,}2691X_1 + 0{,}3358X_2$. The size of relative and effective contributions can be seen in the summary of calculation results in Table 5.

Tabel 5. Results of Calculation of Relative Contributions and Effective Contributions (X_1 and X_2)

Variable	Relative Contribution (SR%)	Effective Contribution (SE%)
X_1	36,1876%	8,1205%
X_2	63,8124%	14,3295%
Total	100%	22,44S%

Based on the table above, it can be concluded that the variable learning environment at home contributes relatively greater than variable learning interest. Effective contribution of learning interest and learning environment at home obtained by 22,45% while 77,55% of the other variables.

CONCLUSION

Based on the results of the research and discussion above, several research conclusions can be drawn as follows:

1. There is a positive and significant relationship between learning interest and mathematics learning result of students grade VIII at SMP N 1 Sedayu Bantul, even semester academic year 2018/2019. This is indicated by the t-test that is $t_{count} > t_{table}$ or $2{,}1299 > 1{,}6991$. The simple correlation coefficient (r) between learning interest (X_1) with mathematics learning result (Y) of 0,3478 with a linear regression equation $\hat{Y} = 22{,}0586 + 0{,}4482X_1$.
2. There is a positive and significant relationship between the learning environment at home and mathematics learning results of students grade VIII at SMP N 1 Sedayu Bantul, even semester academic year 2018/2019. This is indicated by the t-test that is $t_{count} > t_{table}$ or $2{,}5671 > 1{,}6991$. The simple correlation coefficient (r) between the learning environment at home (X_2) with mathematics learning result (Y) of 0,4303 with a linear regression equation $\hat{Y} = 25{,}9811 + 0{,}43422X_2$.
3. There is a relationship between learning interest and learning environment at home with mathematics learning results of students grade VIII at SMP N 1 Sedayu Bantul, even semester academic year 2018/2019. This is indicated by the F-test, which is $F_{count} > F_{table}$ or $4{,}0505 > 3{,}34$. The multiple correlation coefficient (R) between learning interest (X_1) and learning environment at home (X_2) with mathematics learning result (Y) of 0,4734 with a double linear regression equation $\hat{Y} = 12{,}7059 + 0{,}2691X_1 + 0{,}3358X_2$ and the relative contribution of learning interest (X_1) by 36,1876% and the relative contribution of the learning environment at home (X_2) by 63,8124%. The effective contribution of learning interest $(X_1)$is 8,1205% and the effective contribution of the learning environment at home (X_2) is 14,3295%.

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